

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

**WSOU INVESTMENTS, LLC D/B/A
BRAZOS LICENSING AND
DEVELOPMENT,**
Plaintiff,

v.

CANON, INC.,
Defendant.

**CIVIL ACTION 6:20-cv-00980-ADA
CIVIL ACTION 6:20-cv-00981-ADA**

CANON INC.,
Third-Party Plaintiff,

v.

NXP USA, INC.,
Third-Party Defendant.

CIVIL ACTION 6:20-cv-00980-ADA

**PLAINTIFF WSOU INVESTMENTS, LLC D/B/A BRAZOS LICENSING AND
DEVELOPMENT'S RESPONSIVE CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Plaintiff WSOU Investments, LLC d/b/a Brazos Licensing and Development (WSOU”), submits this Responsive Claim Construction Brief (“Resp. Brief”) in support of WSOU’s proposed claim constructions and phrases identified for construction from the claims of U.S. Patent Nos. 7,054,346 (the “’346 Patent,” Ex. 1¹) and 7,116,714 (the “’714 Patent,” Ex. 2) and in response to Defendant Canon, Inc.’s (“Canon”) Opening Claim Construction Brief (“Df. Br.”). (C. A. Nos. 6:20-cv-00980-ADA, D.I. 52; 6:20-cv-981-ADA, D.I. 40).

The ’346 and ’714 Patents (“the Patents-in-Suit”) use claim language that is familiar to those skilled in the art at the time of the respective inventions. Accordingly, there is a heavy presumption that the claim terms of the Patents-in-Suit will have plain and ordinary meanings. There are only two exceptions to this established principle: (1) when the patentee clearly acted as a lexicographer and defined the term; and (2) when there is a clear disavowal of claim scope.

WSOU applies these well-established legal principles here, and proposes that the disputed terms in the ’346 and ’714 Patents be given their plain and ordinary meanings as neither of the two exceptions apply for these terms. Accordingly, none of the disputed terms require construction. Nonetheless, to the extent the Court deems constructions necessary, WSOU has proposed constructions that rely principally on the claim language and specifications and are consistent with the prosecution histories of the ’346 and ’714 Patents.

By contrast, Canon offers unnecessary and improper constructions that are contrary to both the plain language of the claims and basic claim construction principles. For example, Canon’s proposed constructions seek to import limitations without any basis in the intrinsic evidence,

¹ Unless otherwise specified, all citations to “Ex. __” refer to exhibits to the September 15, 2021 Declaration of Jonathan K. Waldrop in support of this Responsive Claim Construction Brief, concurrently filed.

including for commonly understood terms, and/or make claim limitations superfluous. Such approaches are improper. Canon contends, in the alternative, that if the Court does not agree with its tortured constructions, then the disputed terms are indefinite. But that is incorrect. As explained in detail below, the plain and ordinary meanings of the claim terms are definite. Thus, the Court should reject Canon's proposed constructions and adopt those proposed by WSOU.

II. CONSTRUCTIONS OF THE DISPUTED TERMS IN THE '346 PATENT

A. U.S. Patent No. 7,054,346 (Case No. 6:20-cv-00980-ADA)

WSOU is asserting at least claims 1-4, 7, 9, 11-16, and 19 of the '346 Patent ("Asserted Claims of the '346 Patent"). The '346 Patent generally relates to wireless communication systems, particularly frequency hopping. Ex. 1 ('346 Patent) at 1:6-7. The specification identifies technical problems in the prior art and teaches improvements to those systems. For example, the specification notes that in prior art wireless communication systems "the frequency hopping is typically non-ideal and the benefits of fading and interferer diversity is not fully realized." *Id.* at 1:38-40. The specification further describes methods of frequency hopping: cyclic and pseudorandom. *Id.* at 1:40-45. The specification also notes that while "cyclic hopping provides full fading diversity" in certain instances, it "does not provide the benefits of interferer diversity and interference averaging." *Id.* at 1:45-47, 53-54. The specification further notes that while the pseudo-random frequency hopping algorithm "provides interferer diversity and achieves long-term interference averaging," it "does not guarantee fading diversity (*i.e.*, no frequency repetitions) within the interleaving depth of a speech frame." *Id.* at 1:55-59. Particularly, the specification notes that "the GSM pseudo-random frequency hopping algorithm does not maximize the number of unique frequencies (or independent fading states)" and lead to "degradation in error performance." *Id.* at 2:15-26.

In order to mitigate these problems, the '346 Patent claims enhanced frequency hopping systems, which uses pseudorandom frequency hopping to “maximize[] the number of unique frequencies” used in the hopping to achieve improvement in fading diversity. *Id.* at Title; Abstract; 2:31-48; 7:27-30. The specification describes embodiments for an enhanced pseudorandom frequency hopping system. For example, “hopping frequency sequences are ***constrained*** in order to ***reduce, or minimize***, repeated frequencies ***over a time period T***,” – not eliminated or prohibited. *Id.* at 3:37-39 (emphasis added). “[O]ver at least ***a portion of the time period T*** the choice of frequencies to select from within the hopping set is ***constrained*** . . . [such that] prior selected frequencies are ***temporarily prohibited*** from being selected again from the hopping set.” *Id.* at 2:39-48 (emphasis added); *see also* Cooklev Decl. at ¶¶ 50-52.²

In its brief, Canon goes to a great length to provide a description of the specification. Df. Br. at 2-8. Canon’s characterizations are inaccurate. The specification speaks for itself, and Canon’s attempted rewrite is improper. WSOU provides responses to these mischaracterizations throughout this brief.

For instance, Canon contends that the prior art systems “did not create a cyclic time period within which channels were not repeated,” and, thus the '346 invention is limited to “cyclical” time periods. Df. Br. at 8 (emphasis added). However, none of the embodiments in the '346 Patent employ “a cyclic time period.” The '346 Patent example algorithm(s) are not limited to “cycle(s).” They are described in terms of “time period T.” *See, e.g.*, Ex. 1 ('346 Patent) at 3:38-46. One or more embodiments of the claimed invention include “shift[ing] the hopping set in a cyclical direction.” (*Id.* at claims 6, 18 (emphasis added)). In light of the specification, a POSITA would

² “Cooklev Decl.” refers to the Answering Declaration of Todor Cooklev, Ph.D., concurrently filed in support of WSOU’s Responsive Claim Construction Brief.

not have understood “shift[ing] the hopping set in a cyclical direction,” to mean “a cyclic time period.” (Cooklev Decl. at ¶¶ 51, 52, 54).

B. The ’346 Patent Prosecution History

Canon attempts to interject a disclaimer argument in its description of the ’346 Patent’s prosecution history. Df. Br. at 8-10. However, Canon mischaracterizes the file history. The prosecution history speaks for itself. As shown below, there were no clear disavowals. Accordingly, prosecution disclaimer does not apply.

Following the filing of the application on May 7, 2001, the USPTO rejected original claims 1, 3, 5, 6, 8-10, 12-17, 19, 21, 22, and 24-26 (“Original Claims,” Ex. 4) in a May 4, 2004 Office Action (“May 2004 Office Action,” Ex. 5), as, *inter alia*, being purportedly anticipated by either U.S. Patent No. 4,654,859 to Kung (“Kung,” Ex. 6) or U.S. Patent No. 5,541,954 to Emi (“Emi,” Ex. 7), and original claims 2, 4, 7, 11, 18, 20, 23, and 27 to be allegedly obvious for Kung. Ex. 5 (May 2004 Office Action) at WSOU-CANON-0000223-29.

On August 16, 2004, the applicant filed a response and amended claims 1, 3, 5, 6, 8, 10, 15, 17, 19, 21, 22, 24, and 26 to include the “pseudorandom[ly]” limitation, while cancelling dependent claims 2, 4, 7, 11, 18, 20, 23, and 27, which were originally presented with that limitation. *See* August 16, 2004 Amendment and Response (“August 2004 Response,” Ex. 8).

In the August 2004 Response, the applicant clarified that “Kung selects a frequency by *cycling* through an ordered frequency set in a *predetermined* fashion. In contrast, the present invention pseudorandomly selects a hopping frequency.” Ex. 8 (August 2004 Response) at 11 (emphasis added). With respect to Emi, the applicant clarified that:

Emi appears to disclose a frequency hopping scheme where a receiver counts errors it has received on each given frequency. If a total error count exceeds some metric, then the received frequency will be deemed unusable and an alternative, unused frequency will be substituted in its place. . . . One of ordinary skill in the art, on

reading Emi would not equate Emi's substitution of a new frequency [based on error counts] with pseudorandom frequency hopping selection.

Id. These statements were not disavowals.

Subsequently, in an office action dated January 7, 2005 ("January 2005 Office Action," Ex. 9), the Examiner removed the rejections over Kung and Emi. *Id.* at 2. The Examiner also allowed then pending claims 8-10, 12-14, and 24-26. *Id.* at 6. In addition, the Examiner rejected claims 1, 3, 15-17, and 19 as purportedly anticipated by U.S. Patent No. 5,377,221 to Munday ("Munday," Ex. 10) and claims 1, 5, 6, 21, and 22 as purportedly anticipated by U.S. Patent No. 6,345,066 to Haartsen ("Haartsen," Ex. 11). Ex. 9 (January 2005 Office Action) at 2-6. On April 5, 2005, the applicant filed a Request for Reconsideration (April 5, 2005 Request for Reconsideration ("April 2005 Request," Ex. 12)), in which the applicant amended then pending claims 1, 5, 6, 8, 10, 15, 17, 19, 21, 22, 24, and 26 to include, *inter alia*, the following claim language: "such that at least one of the selected frequencies is prohibited from subsequent selection in at least a portion of the time period T." Ex. 12 (April 2005 Request) at 2-10. At least the original claims 6 and 22 that included the limitation "such that at least one of the selected frequencies is prohibited from subsequent selection in at least a portion of the time period T" were presented without amendment to that claim term. *Id.* at 3-4.

In the April 2005 Request, the applicant clarified the following:

[N]either Munday nor Haartsen, taken separately or in combination, discloses or suggests such a prohibition on frequency selection. Instead, it appears that after a set of frequencies is selected in Munday or Haartsen any frequency within the set can be re-selected without prohibition. Said another way, neither Munday nor Haartsen is prohibited from re-selecting a frequency, from a set of allowable frequencies, that has already been selected during a time period, T, as in the claims of the present invention.

Id. at 11-12. These are not clear disavowal of claim scope.

Ultimately, the claims were allowed. The Examiner provided the following reasons for allowance.

None of the prior art teaches or suggests a frequency hopping method as the current application. In specific, pseudorandomly selecting frequency from a set N (total number of frequencies available) frequencies, where prior selected frequencies are prohibited from being selected again from the hopping set. *Thus, repetition of frequency over time period T is reduced.*

See December 15, 2005 Notice of Allowability (“Notice of Allowability,” Ex. 13) at 2 (emphasis added).

C. ’346 Patent Constructions

a. The “Time Period T” Terms (All Asserted Claims)

Claim Term	WSOU’s Proposed Construction	Canon’s Proposed Construction
“a time period T”/ “[at least] a portion of the time period T”	Plain and ordinary meaning; or, if the Court deems a construction is necessary: “a period of time T”/ “[at least] a portion of the period of time T”	“T is a pre-set amount of time for one cycle of frequency hopping, which is no greater than the amount of time it would take to use each channel available for frequency hopping once,” otherwise indefinite.

1. The Plain and Ordinary Meaning of the “Time Period T” Terms Should Be Adopted

The “time period T” terms should be given their plain and ordinary meaning because they have a well-understood meaning in the art. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (The plain and ordinary meaning of a term is the “meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.”). However, should the Court deem a construction necessary, WSOU proposes these terms to mean “a period of time T” and “[at least] a portion of the period of time T,” respectively.

The intrinsic record supports usage of the plain and ordinary meaning. For instance, the claim language makes clear that the “time period T” terms refers to a period of time defined by T. Additionally, the “time period T” terms are used throughout the specification in the same way. Cooklev Decl. at ¶¶ 74-77; Ex. 1 (’346 Patent) at Abstract; 2:31-48; 3:38-56; all claims. For example, the specification refers to the “time period T” as the period of time over which a device transmits signals using frequency hopping. *Id.* Indeed, as of May 2001, a POSITA would have understood the “time period T” terms to be a variable commonly used in computer programs and algorithms in electrical and computer engineering. Cooklev Decl. at ¶ 77. As of May 2001, a POSITA would have known that algorithms are written using variables, and that these variables are given specific values when the algorithms are executed. *Id.*

2. Canon’s Proposed Construction Should Be Rejected

Canon contends that the “time period T” terms should be construed as “T is a pre-set amount of time for one cycle of frequency hopping, which is no greater than the amount of time it would take to use each channel available for frequency hopping once,” otherwise they are indefinite. Df. Br. at 10-11. But both of Canon’s proposed construction and alternative indefiniteness argument should be rejected as improper and inconsistent with the terms’ plain and ordinary meaning that is definite.

a. Canon’s Proposed Construction Improperly Imports Limitations and Is Contrary to the Intrinsic Record

More specifically, Canon’s proposed construction for the “time period T” terms improperly imports not one but two additional limitations: that the time period T is limited to (i) “one cycle of frequency hopping”; and (ii) “no greater than the amount of time it would take to use each channel available for frequency hopping once.” Df. Br. at 10. In other words, Canon seeks a construction where no single channel can be used more than once for frequency hopping. But such limitations

are not even suggested by, much less stated in, the asserted claims. To the contrary, the asserted claims state that “at least one of the selected frequencies is prohibited from subsequent selection *over [some] portion* of the time period T”, but do not require – as Canon’s proposed construction – that the *each* previously selected frequency is prohibited from being repeated over the *entire* time period T.

In an effort to circumvent the asserted claims’ plain language, Canon contends that such limitations should be imported from the specification and prosecution history read “as a whole.” Df. Br. at 11-13. Canon further argues that during the patent prosecution the patentee “consistently limited the claims to a specific algorithm in which a frequency cannot be repeated during one time cycle, e.g., the amount of time it takes a frequency hopping system to use each channel available for frequency hopping once.” *Id.* at 13. But Canon’s attempt to import limitations from the exemplary embodiment(s) in the specification and prosecution history is unsupportable in fact and law because Canon does not—since it cannot—point to any clear lexicography within the specification or clear disavowal from the prosecution history.³

Just like the plain language of asserted claims, description of the invention in the specification and the prosecution history contradict Canon’s position. For example, the specification refers to restricting frequencies over some “portion of the time period T” but *not* the entire time period T. *See* Cooklev Decl. at ¶¶ 79-84; *see also* Ex. 1 (’346 Patent) at Abstract, 2:31-36; *see*. In fact, the specification expressly states that the prohibition against using previously selected frequencies is *temporary* not during the entire time period T: “prior selected frequencies

³ The patent specification makes clear that the embodiment described is merely an example and not intended to limit the scope of the claims. *See, e.g.*, Ex. 1 (’346 Patent) at 3:42-44 (“For example, if the total number of frequencies, N, in a hopping set is equal to four . . .”), 5:21-27 (“Consider an example with the following parameters: . . .”), 5:53-55 (“In this example, 3, . . .”). Thus, it would be improper to import the embodiment into the scope of the claims.

are *temporarily* prohibited from being selected again from the hopping set.” *See id.* at 2:45-48 (emphasis added). The specification makes clear that the purpose of that is so “repetition of frequencies over the time period T is *reduced*”—not eliminated altogether from being re-used during time period T, as Canon contends. *See id.* (emphasis added). The specification further states the “[i]n accordance with the invention, hopping frequency sequences are constrained in order to reduce, or minimize, repeated frequencies over a time period T”—again, not eliminated in the entirety during the remaining period of time T. *See id.* at 3:38-40.

Similarly, the statements made during prosecution history are consistent with the specification and asserted claims. For example, the applicants explained that the claims include a “feature of pseudorandomly selecting a frequency or frequencies from a set of frequencies that has been constrained, reduced, or limited ‘such that at least one of the selected frequencies is prohibited from subsequent selection in at least *a portion of [a] time period T*.’” *See* Ex. 12 (April 2005 Request) at 11 (emphasis added). The applicants further stated that “that neither Munday nor Haarten, taken separately or in combination, discloses or suggests such a prohibition on frequency selection.” *Id.* The applicants made similar argument in their appeal. *See* Ex. 14 (April 2005 Appeal Brief) at 17-18.

In fact, the Notice of Allowability made clear that the invention over the prior art was that the “repetition of frequency over time period T is reduced” – but need not be eliminated. Ex. 13 (Notice of Allowability) at 2. Thus, there was no unequivocal disavowal of the claim scope that a selected frequency need only be prohibited from a portion of time period T rather than the entirety.

b. The “Time Period T” Terms Are Not Indefinite

Canon contends that if the Court does not adopt its proposed limitations into the “time period T” terms, then those terms are indefinite because they are purportedly “undefined variables.” Df. Br. at 10-13. That is wrong. At the outset, the purpose of *Markman* is to construe

the claims and because of the very high burden to show indefiniteness, courts frequently decline to find indefiniteness at the *Markman* stage. *See, e.g., 0912139 B.C. Ltd. v. Rampion USA Inc.*, No. C18-1464JLR, 2019 WL 3426058, at *16 (W.D. Wash. July 30, 2019) (collecting cases). The “time period T” terms are variables that correspond actual time periods, and a POSITA would understand that based on the claim language and patent specification. Cooklev Decl. at ¶¶ 77, 86-90. It is well-established that as long as a POSITA is able to derive the values of a claim term even though the claims and/or the specification do not provide actual values, such terms do not render the claim indefinite. For example, in *TQ Delta, LLC v. 2WIRE, Inc.*, the court held that the term “N CRC anomalies”, a variable used in the algorithm of the claimed communication systems, is not indefinite, even though the asserted claims did not provide an actual, finite value. No. 1:13-CV-01835-RGA, 2018 WL 4062617, at *6 (D. Del. Aug. 24, 2018). The Court reasoned that because the patent specification provided an example where the “N” variable is set to 18 and described communication systems where a POSITA could derive its value in the context of the specification, the “N” variable was definite as used in the claim. *Id.*; *see also Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (finding the term “so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof” not indefinite despite not providing actual dimensions); *In re Packard*, 751 F.3d 1307, 1313 (Fed. Cir. 2014) (“[the definiteness] requirement is not a demand for unreasonable precision.”). Like in *TQ Delta*, a POSITA would know how to derive “T” in the context of the claims and the specific wireless communication system being implemented. The specification provides a detailed description of the claimed pseudo-random frequency hopping algorithm over which the “period of time T” applies. Ex. 1 (’346 Patent) at 3:38-56. The specification further provides examples of wireless communication systems that use frequency

hopping that can be used to implement the claimed invention. *See, e.g., id.* at 3:3-12; GSM; 3GPP TS 45.002, 3rd Generation Partnership Project; Technical Specification Group GERAN; Digital Cellular telecommunications System (Phase 2+); Multiplexing and Multiple Access on the Radio Path (Release 4)). In light of the specification and claims, a POSITA would understand how to derive the value of “a period of time T” in the context of the claims.

Canon further complains that the “time period T” terms, under WSOU’s plain meaning, could be a nanosecond, a minute, or a thousand years, and, as a result, “the patent owner might [allegedly] attempt to choose arbitrary and unreasonable time periods, unrelated to the algorithms of an accused product, to suit its infringement theory.” Df. Br. at 11-12. That argument fails because raising infringement-related concerns during claim construction is premature, improper, and should not be considered. *Eon Corp. IP Holdings v. Silver Spring Networks*, 815 F.3d 1314, 1319 (Fed. Cir. 2016) (“[T]here are limits to the court’s duties at the claim construction stage. For example, courts should not resolve questions that do not go to claim scope, but instead go to infringement”) (internal citations omitted).

The Federal Circuit and other district courts addressing similar facts have held that in circumstances where a term can take a wide variety of values, as Canon claims here, the issue goes to breadth and not indefiniteness. In such circumstances, courts look to see whether the claims and specification let the public know that any value can be used so long as the claim term plays its claimed role in the claimed process or device. *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017) (“the claims and specification let the public know that any known SCR and AMOx catalysts can be used as long as they play their claimed role in the claimed architecture.”); *Optis Wireless Tech., LLC v. Apple Inc.*, No. 2:19-CV-00066-JRG, 2020 WL 1692968, at *12 (E.D. Tex. Apr. 7, 2020) (“the [equation variable] Y_k is akin to the catalysts

in *BASF*—the claims and the specification of the ’332 Patent let the public know that any initial value may be used, so long as Y_k plays its claimed role in the claimed process or device.”). As discussed above, a POSITA would know how to derive “T” in the context of the claims and the specific wireless communication system being implemented.

Further, Canon agreed to the plain and ordinary meaning of a similar time period term—“predetermined [first/second] period.” See *Canon, Inc. v. TCL Electronics Holdings Ltd.*, No. 2:18-cv-00546, D. I. 149 (E.D. Tex. May 1, 2020). Thus, Canon has no basis to complain here.

Moreover, the cases relied upon by Canon are inapposite. For example, the “Arrhenius’ equation” term in *Howmedica* concerned the computation and application of multiple variables where the specification provided three different alternatives for those variables where each led to different interpretations of the scope of the claims. See *Howmedica Osteonics Corp. v. Zimmer, Inc.*, No. CIV. 05-897 (WHW), 2007 WL 1741763, at *6-9 (D.N.J. June 13, 2007), *aff’d*, 397 F. App’x 654 (Fed. Cir. 2010). Unlike there, as explained above, there is nothing complicated about the “time period T” terms—it is a period of time, not some other variable like a temperature, for example.

Other cases cited by Canon fair no better. Canon cites *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1373 (Fed. Cir. 2014) and *Max Blu Techs., LLC v. Cinedigm Corp.*, No. 2:15-CV-1369-JRG, 2016 WL 3688801, at *28 (E.D. Tex. July 12, 2016) for the proposition that “a proper and definite construction of a time period T would allow a POSITA to read the patent and understand the metes and bounds of the claim in order to avoid infringement.” Df. Br. at 12. Neither case is applicable here. *Interval Licensing* concerns construction of the term “unobtrusive manner.” That term is subjective on its face and the court held as such. *Id.* at 1373. By contrast, there is nothing subjective about the “time period T” terms. *Max Blue* on the other hand concerns

the construction of the term “substantially flat and coplanar.” The court in *Max Blue* construed that term as a term of degree. While Canon has not expressly articulated that the “time period T” terms are terms of degree, such contentions on similar facts have been rejected by other courts. *TQ Delta*, 2018 WL 4062617, at *6 (rejecting defendants’ argument that the term “N” is analogous to a term of degree).

Contrary to Canon’s contention, *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374 (Fed. Cir. 2015) does not apply here either. In *Nautilus*, the claims at issue were directed to a heart monitor device with live electrode and common electrode components. The court construed the “spaced relationship” term to mean “the distance between the live electrode and the common electrode.” The court imposed upper and lower boundaries to that distance, *i.e.*, not greater than the width of a user’s hand. The court based that on one hand, “claim 1 requires the live and common electrodes to independently detect electrical signals at two distinct points of a hand,” and on the other, “it is not feasible that the distance . . . be infinitesimally small, effectively merging the live and common electrodes into a single electrode with one detection point.” *Id.* at 1383. By contrast, the boundaries that Canon attempts to inject are contrary to the plain language of the asserted claims. For example, Canon contends “the upper bound of the time period T must be no greater than the amount of time it would take to use each channel available for frequency hopping once. Df. Br. at 13. But the claims themselves state that “at least one of the selected frequencies is prohibited from subsequent selection *in at least a portion of time period T*” -- not the entirety of time period T, as Canon wrongly contends.

Indeed, the Supreme Court has stated that “[e]ach element contained in a patent claim is deemed material to defining the scope of the patented invention.” *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997). Consistent

with this principle, if Canon’s construction adds nothing more than what is already recited in the surrounding context of the disputed term, as Canon contends, then its construction is presumptively incorrect as rendering certain claim language superfluous. *Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004) (“interpretations that render some portion of the claim language superfluous are disfavored.”); *see also Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950–51 (Fed. Cir. 2006) (rejecting a construction of a term that would render another limitation superfluous). *Elektro Instrument S.A. v. O.U.R. Sci. Int’l, Inc.*, 214 F.3d 1302, 1307 (Fed. Cir. 2000) (claim language “only within a zone extending between latitudes 30°–45°” does not read on a device with radiation sources extending between 14°–43° because “[a]ny other conclusion renders the reference to 30 degrees superfluous”); *USB Bridge Sols., LLC v. Buffalo Inc.*, No. 1-17-CV-001158-LY, 2020 WL 1906898, at *7 (W.D. Tex. Apr. 17, 2020) (rejecting a construction that “introduces superfluous language that already exists in the claims or includes elements (and limitations) not present in the disputed terms.”).⁴

b. The Hopping Sets of “N” and “F” Frequencies (All Asserted Claims)

Claim Term	WSOU’s Proposed Construction	Canon’s Proposed Construction
“a set of N frequencies”/ “a size of N/F frequencies” / “a set of F frequencies” / “a set of hopping frequencies” /	Plain and ordinary meaning	“N frequencies” / “a set of hopping frequencies” / “a hopping set” are “a pre-configured number of distinct hopping frequencies to which the hopping constraining algorithm is applied and which must not be selected more than once over the time period T,” otherwise

⁴ Separately, Canon contends that claim 11 is invalid because the limitation “at least a portion of the time period T” is indefinite for lack of antecedent basis. Df. Br at 12 n.3. As an initial matter, Canon has never previously raised this defense, and therefore it has been waived. In any event, it is well-established that the lack of an antecedent basis alone does not render a claim indefinite as long as the claim “apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by [§ 112 ¶ 2].” *Downing*, 754 F. App’x 988, 996 (Fed. Cir. 2018). As explained above, the ’346 Patent specification provides sufficient guidance on deriving the scope of the “time period T” terms. Accordingly, claim 11 is not indefinite for lack of antecedent basis.

Claim Term	WSOU's Proposed Construction	Canon's Proposed Construction
“a hopping set” / “a hopping set to a size of N/F frequencies” / “a hopping set comprising N/F frequencies” / “where N is the total number of frequencies available for frequency hopping”		indefinite. “a size of F frequencies” / “a set of F frequencies” / “a hopping set to a size of F frequencies” / “a hopping set comprising F frequencies” are “for a time period T, the number of remaining frequencies available for frequency hopping that have not been previously selected during that time period”, otherwise indefinite

1. The Plain and Ordinary Meaning of The Hopping Sets of “N” and “F” Frequencies Should Be Adopted

The hopping sets of “N” and “F” frequency terms should be given their plain and ordinary meaning because they have a well-understood meaning in the art. *Phillips*, 415 F.3d at 1312. The intrinsic record is consistent with this construction. The term “N” is clearly defined in the claim language itself as “the total number of frequencies available for frequency hopping.” Ex. 1 (’346 Patent) at claims 1, 4, 5, 7, 13, 16, 17, and 19. The specification further provides that “N is the total number of frequencies available to hop over.” *Id.* at 3:61-62. Like the “N” term, the term “F” is also clearly defined in the claim language itself as “the number of frequencies in a hopping state H.” *Id.* at claims 3, 5, 15, and 17. The specification provides that “F is \leq N and is the number of frequencies in H” and F is “the number of currently allowable frequencies.” *Id.* at 3:62-63; 6:65; Cooklev Decl. at ¶¶ 91-93.

2. Canon’s Proposed Constructions Should Be Rejected

Canon seeks to construe the “N” hopping frequency terms to mean “a pre-configured number of distinct hopping frequencies to which the hopping constraining algorithm is applied and which must not be selected more than once over the time period T,” and the “F” hopping frequency terms to mean “for a time period T, the number of remaining frequencies available for frequency

hopping that have not been previously selected during that time period.” In other words, Canon seeks to incorporate, among other things, the limitation that no selected frequency is repeated over time period T into these terms, like it does for the “time period T” terms. But, as discussed above, that is improper and should be rejected.

First, Canon’s proposed constructions seek to improperly import limitations that are contrary to the plain language of the claims. The asserted claims state that “at least one of the selected frequencies is prohibited from subsequent selection *over some portion* of the time period T”, but do not require – as Canon’s proposed construction – that the *each* previously selected frequency is prohibited from being repeated over the *entire* time period T. Canon’s construction would improperly render “over some portion of time period T” meaningless. Indeed, if each of Canon’s constructions were to be adopted the claim language would be repetitive and nonsensical.

Second, Canon’s attempt to circumvent the asserted claims’ plain language by arguing that the limitations should be imported from the specification’s examples and statements made during the prosecution similarly fail. Df. Br. at 16. More specifically, it is black-letter law that limitations cannot be imported from example embodiments described in the specification. *Phillips*, 415 F.3d at 1323 (“although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”) In fact, like the claim language, the specification’s description of the invention contradicts Canon’s proposed constructions. For example, the specification refers to restricting frequencies over some “portion of the time period T” but *not* the entire time period T. *See, e.g.*, Ex. 1 (’346 Patent) at Abstract, 2:31-36, 2:45-48 (“prior selected frequencies are *temporarily* prohibited from being selected again from the hopping set”); *see also supra* at pp. 3, 8, 9; *see also* Cooklev Decl. at ¶¶ 50-52. The specification makes clear that the purpose of that is so “repetition of frequencies over the time

period T is *reduced*”—not eliminated altogether from being re-used during time period T, as Canon contends. *See* Ex. 1 ('346 Patent) at 2:45-48 (emphasis added).

Contrary to Canon’s assertion (Df. Br. at 16), the patentee made no disclaimer or disavowal with respect to the scope of the “N” and “F” terms. In fact, those terms were not amended. The Federal Circuit has held that “it is the claims ultimately that define the invention,” and any arguments during prosecution “not presented as a necessary feature” of the claims is not a clear disavowal. *See, e.g., Purdue Pharma L.P. v. Endo Pharms. Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006) (holding that a four-dosage range to distinguish the claimed oxycodone formulations from prior art opioids is not a clear disavowal because it was not presented as a “necessary feature of the claimed formulations,” but rather “as a property of, or a result of administering, the oxycodone formulations characterized by the *in vivo* blood plasma concentrations set forth in the claims,” and “the claims contain no limitations relating to the effectiveness of dosages in controlling pain in patients.”); *see also 3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315, 1325 (Fed. Cir. 2013) (“[I]n order for prosecution disclaimer to attach, the disavowal must be both clear and unmistakable.”). Rather, as described above, the statements made during prosecution history are consistent with the specification and asserted claims. *See supra* at pp. 4-6; *see also* Cooklev Decl. at ¶¶ 57, 58, 78-82, 102. Accordingly, there is nothing in the comments where the patentee clearly and unmistakably redefined those terms as Canon contends. And there is no clear and unmistakable disavowal of scope with respect to these terms.

Third, Canon’s contention that, if the Court does not adopt its proposed improper limitations to hopping sets of “N” and “F” frequency terms, then they are indefinite as purportedly

“undefined variable” is unsupported in fact and law. Df. Br. at 14-16.⁵ More specifically, there is nothing complicated about the hopping sets of “N” and “F” frequency terms as “N” and “F” are clearly defined in the claims and specification as explained above. Similar to the “time period T” terms, the hopping sets of “N” and “F” frequency terms are variables that are well-understood in the context of frequency hopping used in communication devices. Cooklev Decl. at ¶ 92. However, they are certainly not undefined. As explained above, prior courts routinely reject indefiniteness of such terms despite lack of actual values in the patent disclosure as long as a POSITA is able to derive the values of a claim term. *See, e.g., TQ Delta*, 2018 WL 4062617, at *6; *BASF Corp.*, 875 F.3d at 1367; *Optis Wireless.*, 2020 WL 1692968, at *12; *Orthokinetics*, 806 F.2d at 1576.

Moreover, Canon contends that “a POSITA has no way of knowing whether ‘N frequencies’ could refer to: 1) all frequencies in nature; 2) all frequencies allowed by government regulations; 3) all frequencies available to a particular communications standard; 4) all frequencies currently being used for hopping according to the claimed algorithm; or some other grouping” is misplaced. Df. Br. at 14-15. That argument improperly takes the terms out of context. A POSITA would know how to derive “N” and “F” in the context of the claims and the specification. Cooklev Decl. at ¶¶ 91, 93, 104-108. The ’346 Patent claims and specification provide a detailed description of the claimed pseudo-random frequency hopping algorithm over which the “N” and “F” terms apply. Ex. 1 (’346 Patent) at Abstract, 2:31-48, 3:13-56, 3:57-4:10, 5:3-27, 5:42-6:42; claims 1-5, 7, 10, 11, 13-17, and 19, Fig. 3. The ’346 Patent specification further provides a specific illustration of how to derive “N” and “F” values and describes a protocol for deriving the

⁵ The case law that Canon relies upon for its proposed constructions is similarly inapposite for the reasons stated above. *See supra* at ____.

range of “F” in the context of specific wireless communication systems. *Id.* at 5:3-6:53, 6:62-7:19, Fig. 5, Fig. 6. In light of the specification and claims, a POSITA would understand how to derive the value of the “N” and “F” terms in the context of the claims depending on the specific wireless communication system being implemented. Cooklev Decl. at ¶¶ 104-107.

c. “At Least One of the Selected Frequencies is Prohibited from Subsequent Selection” (All Asserted Claims)

Claim Term	WSOU’s Proposed Construction	Canon’s Proposed Construction
“at least one of the selected frequencies is prohibited from subsequent selection”	Plain and ordinary meaning; or, if the Court deems a construction is necessary: “at least one of the selected frequencies is not allowed to be subsequently selected”	“a frequency that has already been used during the time period T is prohibited from being re-used during the remainder of the time period T solely because it has been previously used”

This term should be given its plain and ordinary meaning because it is well-understood and requires no further explanation. Like the “time period T” terms and “N” and “F” hopping set terms, its plain meaning is consistent with the remainder of asserted claims’ language, the specification, and prosecution history. *See supra* at pp. 4-7, 15; *see also* Cooklev Decl. at ¶ 107. There is no reason to conclude otherwise.

Unsurprisingly, however, Canon seeks a construction that improperly imports two limitations: (i) that “a frequency that has already been used during time period T is prohibited from being reused during the remainder of the time period T”; and (ii) that said frequency is “prohibited from being reused *solely* because it has been previously used.” Df. Br. at 17-19 (emphasis added). These proposed limitations are improper, and should be rejected.

More specifically, these limitations are contrary to the plain language of the asserted claims. As repeatedly stated above, the asserted claims state that “at least one of the selected

frequencies is prohibited from subsequent selection *over some portion* of the time period T”, but do not require – as Canon’s proposed construction – that the *each* previously selected frequency is prohibited from being repeated over the *entire* time period T. Canon’s construction would improperly render “over some portion of time period T” meaningless. And, if each of Canon’s constructions were to be adopted the claim language would be repetitive and nonsensical.

Similarly, the claim language itself does not require that previous selection be the *sole* reason to prohibit the use of that frequency at some point later during time period T. Had the patentee intended so, it would have included such language. *See Pisony v. Commando Construction, Inc.*, No. W-17-CV-00055-ADA, 2019 WL 928406, at *6 (W.D. Tex. Jan. 23, 2019) (“the Court finds such a substitution unnecessary because the words chosen by the scrivener ... are more than adequate to be understood by one who is skilled in the art”). Nor does the patent specification clearly require such a limitation.

Rather, Canon argues that the patentee limited the scope of the asserted claims during prosecution. Df. Br. at 17-18. But that is wrong. As explained above, the patentee did not disclaim any scope of the asserted claims to require that no frequency could be repeated during the entirety of time period T. *See supra* at pp. 4-6, 9, 17. That is contrary to the claim language and specification. *Id.* Nor did the patentee make any disclaimer that should require that a previously selected frequency is “prohibited from being reused *solely* because it has been previously used.” Df. Br. at 17-18. None of the amendments made during the prosecution include the language that Canon seeks to improperly import. Cooklev Decl. at ¶¶ 60, 69, 112, 113. And none of the patentee’s remarks make such disclaimers. *Id.* at ¶¶ 65, 66, 70. Instead, Canon is seeking to import those drastic limitations based on its own interpretation of the prosecution history. But that is improper. *See, e.g., Purdue Pharma*, 438 F.3d at 1136.

d. “Pseudorandom[ly]” (All Asserted Claims)

Claim Term	WSOU’s Proposed Construction	Canon’s Proposed Construction
“pseudorandom[ly] ”	Plain and ordinary meaning; or, if the Court deems a construction is necessary: “appears to be patternless”	“a selection generated by an algorithm that approximates a random selection by avoiding a regular pattern of selections when the algorithm is used repeatedly”

The term should be given its plain and ordinary meaning because it is well-understood. *Phillips*, 415 F.3d at 1312. However, should the Court deem a construction necessary, WSOU proposes this term to mean “appears to be patternless,” which is consistent with its plain meaning. The intrinsic record is consistent with this construction. *See, e.g.*, Ex. 1 (’346 Patent) at 2:37-48; *see also id.* at Abstract, 2:37-48, 4:11-67; Claims 1-4, 7, 11, 13-16, and 19; Ex. 8 (August 2004 Response) at 11. In addition, the term is used to mean “appears to be patternless” in the field of wireless communication systems as of May 2001. Cooklev Decl. at ¶¶ 114, 122.

Canon contends that “pseudorandomly” should be construed to mean “a selection generated by an algorithm that approximates a random selection by avoiding a regular pattern of selections when the algorithm is used repeatedly.” Df. Br. at 20-21. That proposed construction should be rejected for improperly importing limitations not required in the claims or specification. *Toshiba Corp. v. Imation Corp.*, 681 F.3d 1358, 1369 (Fed. Cir. 2012) (“Absent disclaimer or lexicography, the plain meaning of the claim controls.”). In particular, pseudorandom does not necessarily avoid regular pattern of selections, particularly when the algorithm is used repeatedly. Cooklev Decl. at ¶ 117, 119. Further, when an algorithm that produces pseudorandom numbers is used repeatedly starting from the same initial state, the resulting sequence would be identical, *i.e.*, a pattern would appear due to the repeated use of the

algorithm. *Id.* at ¶ 117. Accordingly, “avoiding a regular pattern of selections” can contradict “particularly when the algorithm is used repeatedly.”⁶

In fact, this construction injects more ambiguity than clarification. Further, Canon’s proposed construction is inconsistent with the claims and specification in that there is simply no support for “the algorithm to be used repeatedly.” A POSITA also would not know what does it mean to “approximate a random selection.” It is improper to require a criterion for closeness to a random selection. Cooklev Decl. at ¶ 118.⁷

III. CONSTRUCTION OF THE DISPUTED TERMS IN THE ’714 PATENT

A. Technical Background of U.S. Patent No. 7,116,714

The ’714 Patent, issued on October 3, 2006, relates generally to video coding. Video coding is generally a method of data compression that enables transmission of a video sequence in a more efficient and reliable manner. Video coding reduces or eliminates redundancy within a video sequence. For example, video coding can reduce spatial, spectral, and temporal redundancy. In a real world frame, the picture can be compressed by, for example, reducing (i) neighboring pixels that are the same *within the same picture* (spatial redundancy), (ii) color components that

⁶ Canon’s reliance upon statements in the prosecution history fail. Df. Br. at 20-21. That the patentee amended claims to require frequencies to be selected “pseudorandomly” does not change the plain and ordinary meaning of the term. In fact, there was no clear disavowal or definitional language used to define pseudorandom. Nor does Canon point to any. Moreover, Canon’s reliance upon its selected dictionary misplaced. *Id.* Those dictionaries appear to define the term as consistent with the definition of random. But that is not how a POSITA would understand the term.

⁷ While the parties had a dispute over the construction of the “Constrain[]”/“Prohibited Frequency Set” terms, as recited in asserted claims 1- 3, 7, 11, 13-15, 19, it appears that Canon is no longer disputing the construction of those terms because it failed to address those terms in its Opening Claim Construction Brief. Accordingly, the Court should adopt the plain and ordinary meaning of said terms.

are the same (spectral redundancy), and (iii) the objects that appear in multiple frames *in a sequence of pictures or frames* (temporal redundancy).

Video coding is particularly useful for transmission of a video sequence (or a series of frames in a video). Encoding a video reduces the file size and allows for a more efficient transfer. There are different types of video compression methods or schemes. Each reduce redundancy slightly differently. For example, spatial redundancy is the redundancy within a picture. An example of frames encoded to reduce spatial redundancy are called INTRA or I-frames or I-pictures. *See* Ex. 2 ('714 Patent) at 1:36-39. Conversely, the similarity between successive frames can be considered temporal redundancy. *Id.* at 1:38-46. Compression can be achieved by predicting the current picture from another picture, termed an anchor or reference picture. *Id.* Temporally predicted images can be forwardly predicted from a picture occurring before the current picture and are called INTER or P-frames or P-pictures. *Id.* A frame can also be predicted bi-directionally. *Id.* at 1:46-51. Such frames are called B-pictures or B frames. *Id.* Notably, a frame may consist of multiple different encoding schemes, such as when the P-frame contains INTRA-coded areas. This can be used to further optimize compression.

I-frames are generally are of higher quality than P-frames. However, too many I-frames affect negatively the compression ratio. As such, a balance is needed. Prior to the '714 Patent there were several issues encoding and decoding frames, particularly with respect to transmission. Ex. 2 ('714 Patent) at 2:13-50. For example, compressed video can easily become corrupted because an error in P-frames can easily propagate to frames using it as a reference. *Id.* In a streaming broadcast, retransmission of a corrupt frame may create difficulty for network systems because it may require retransmission to all devices. *Id.* at 2:51-3:5. Standards of encoding data prior to the '714 Patent lacked efficiency and reliability. *Id.* at 3:5-58.

The '714 Patent describes novel methods and systems for encoding / decoding video signals. For example, the '714 Patent describes encoding a frame as an I-frame, and also encodes the frame (or part of the frame) again but in a temporally predictive manner with reference to another frame within the video sequence. Ex. 2 ('714 Patent) at 3:36-68, 4:4-26. For example, the encoder may also encode the picture as a P-frame or a B-frame.

B. Argument - '714 Patent Constructions

a. The “Corresponding Temporally Predicted Second Encoded Representation” Terms (Claims 1, 6–9, 12, 13)

WSOU’s Proposed Construction	Canon’s Proposed Construction
Plain and ordinary meaning; or, if the Court deems a construction is necessary: “a corresponding second encoded representation produced using another picture as a reference”	“a temporally predicted second encoded representation of the first picture that is associated with the first encoded representation of the first picture by including both encoded representations in a single encoded video”

The claim term has a plain and ordinary meaning that should govern. To the extent the Court deems it necessary to construe, the term should be construed according to its plain meaning as “a corresponding second encoded representation produced using another picture as a reference.” The claim language supports this construction. For example, representative Claim 6 reads as follows when read in context:

A video encoder comprising...
 and to encode said first picture or said part thereof, using a second encoding mode, *with reference to another picture of the sequence to produce a corresponding temporally predicted second encoded representation of the first picture or said part thereof.*

Ex. 2 ('714 Patent) at Claim 6 (emphasis added). Looking at the claim and the term in context, Claim 6 is directed to a video encoder that comprises an input for receiving a video signal. The parties’ dispute is centered on the second encoding mode. The claim itself makes clear that the second encoding mode is “with reference to another picture of the sequence.” Consistent with

this, WSOU's position is clearly in line with the claim itself that a second encoded representation is produced using another picture as a reference.

The specification is consistent with WSOU's proposed construction. For example, the patent is clear that the second encoded representation is produced using another picture as a reference. *See, e.g.*, Ex. 2 ('714 Patent) at Abstract (the second encoded representation is produced "with reference to another picture of the sequence to produce a corresponding temporally predicted picture"); *id.* at 4:7-9 ("the encoder also encodes the frame (or part of the frame) again, this time in a temporally predictive manner with reference to another frame within the video sequence"). Moreover, Courts routinely give the term "corresponding" its plain and ordinary meaning. *See, e.g., Caddo Systems, Inc., et. al. v. NXP USA, Inc.*, No. 6-20-CV-00244-ADA, Dkt. No. 41 (W. D. Tex. April 24, 2021).

In an effort to confuse the issues, Canon misstates the parties' dispute. According to Canon, WSOU's position is that any two encodings ***without any*** relation to one another would satisfy the claim. Df. Br. at 26. That is simply not the case. In context, the claim clearly relates to encoding a picture with a first and second encoding mode. *See, e.g.*, Ex. 2 ('714 Patent) at claim 6. The court should reject Canon's proposal because it takes the term out of its context. *See, e.g., Kyocera Wireless Corp. v. Int'l Trade Comm'n*, 545 F.3d 1340, 1347 (Fed. Cir. 2008) ("this court does not interpret claim terms in a vacuum, devoid of the context of the claim as a whole").

Canon bases its proposed construction on the fact that the claim uses the term "corresponding." Canon proposes that term "corresponding" should mean that two encodings are "associated" with each other. But this does not make the claim any clearer. Furthermore, when read into the claim, Canon's construction confuses the entirety of the claim. To illustrate this,

inputting Canon's proposed constriction into claim 6 would yield the following (Canon's construction is shown bracketed in bold):

an input for receiving a video signal representing a sequence of pictures, the encoder being arranged to encode a first picture of the sequence or a part thereof, received at the input, using a first encoding mode, without reference to another picture of the sequence to form a first encoded representation of the first picture or said part thereof, and to encode said first picture or said part thereof, using a second encoding mode, with reference to another picture of the sequence to produce [a **temporally predicted second encoded representation of the first picture that is associated with the first encoded representation of the first picture by including both encoded representations in a single encoded video**] of the first picture or said part thereof."

In context, Canon's proposal is nonsensical because it would read as requiring a video of a picture or a video of the part of a picture. Such a vague construction should be rejected. *See Toshiba*, 681 F.3d at 1369 ("Absent disclaimer or lexicography, the plain meaning of the claim controls."). Canon's construction, thus, does nothing more but attempt to rewrite the claim in way that Canon finds advantageous. Such a construction should be rejected. *See Pisony*, 2019 WL 928406, at *6 ("the Court finds such a substitution unnecessary because the words chosen by the scrivener ... are more than adequate to be understood by one who is skilled in the art").

Moreover, Canon's proposal would have the Court improperly add several additional limitations into the claims. *Phillips*, 415 F.3d at 1319–1320 ("One of the cardinal sins of patent law [is] reading a limitation from the written description into the claims.") (*quoting SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001)). According to Canon, the second encoded representation must be "associated with the first encoded representation" and the association must be "by including both encoded representations in a single encoded video." Df. Br. at 26. Neither limitations are in the claims. A construction that adds additional limitations to the claim should be rejected. *See, e.g., Cont'l Circs. LLC v. Intel Corp.*,

915 F.3d 788, 796-97 (Fed. Cir.), *cert. denied*, 140 S. Ct. 648 (2019); *Dayco Prod., Inc. v. Total Containment, Inc.*, 258 F.3d 1317, 1327 (Fed. Cir. 2001).

Canon defends its position under the guise of establishing a relationship from the word “corresponding,” or by statements of benefit within the patent, or by statements taken out of context in the file history. Df. Br. at 26–29. For example, Canon takes statements out of context from Applicant’s remarks. *See* Ex. 16 (July 15, 2005 Amendment and Response). In fact, nowhere in the file history did the applicant limit the claim to Canon’s proposed construction. *Id.* Canon’s construction is thus improper. *Phillips*, 415 F.3d at 1323 (“[W]e have repeatedly warned against confining the claims to those embodiments.”). Further, where the claim read in light of the specification is clear, there is no need to refer to the prosecution history. *Id.* at 1317 (“because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes”). Also, as explained above, Courts routinely give the term “corresponding” its plain and ordinary meaning. *See, e.g., Caddo Systems*, No. 6-20-CV-00244-ADA, Dkt. No. 41 (W. D. Tex. April 24, 2021).

b. “A video codec” (Claims 7, 13), “A multimedia system” (Claims 8, 13), “A portable electronic device” (Claim 12)

Claim Term	WSOU’s Proposed Construction	Canon’s Proposed Construction
“A video codec” (Claims 7, 13)	Plain and ordinary meaning; or, if the Court deems a construction necessary: “software or hardware component/module that encodes and/or decodes video data”	Preamble is not limiting
“A multimedia system” (Claims 8, 13)	Plain and ordinary meaning; or, if the Court deems a construction necessary: “A system that is capable of processing data such as text, audio, images, videos, etc.”	Preamble is not limiting
“A portable electronic device”	Plain and ordinary meaning; or, if the Court deems a construction necessary: “A device that can be easily	Preamble is not limiting

(Claim 12)	moved”	
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These terms are limiting and should be governed by their plain and ordinary meaning. To the extent the Court deems it necessary to construe the terms above, WSOU has proposed constructions that are consistent with the plain and ordinary meaning of the terms as used in the claims and intrinsic record.

Canon, on the other hand, does not provide a construction, but argues that the terms should be considered not limiting. As explained in more detail below, the Court should reject Canon’s argument because they are not merely statements of intended purpose, but are necessary to complete the structure of the invention. *Shoes by Firebug LLC v. Stride Rite Children’s Grp., LLC*, 962 F.3d 1362, 1367 (Fed. Cir. 2020) (“a preamble limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim[....] Conversely, a preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention”) (internal quotations omitted).⁸

There is no bright line rule as to when a preamble is considered limiting. *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989) (“No litmus test can be given with respect to when the introductory words of a claim, the preamble, constitute a statement of purpose for a device or are, in themselves, additional structural limitations of a claim”). The determination of whether a preamble is limiting is made based “on the facts of each case in light of the overall form of the claim, and the invention as described in the specification

⁸ Notably, each of these terms should not even be considered a preamble at all because none are a statement of intended use or purpose. *Shoes by Firebug*, 962 F.3d at 1367. As such, Canon, improperly characterizes the term as a “preamble.” However, the following discussion describes why the term should not be limiting, to the extent the term is found to be a preamble.

and illuminated in the prosecution history.” *Bio-Rad Labs., Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1369 (Fed. Cir. 2020) quoting *Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc.*, 98 F.3d 1563, 1572–73 (Fed. Cir. 1996). Courts have found a preamble limiting, for example, “if it recites essential structure or steps.” *Id.* at 1369 (Fed. Cir. 2020). Similarly, a preamble is limiting “if it is ‘necessary to give life, meaning, and vitality’ to the claim. *Id.*, quoting *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999). “Moreover, clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002).

1. “A Video Codec” (Claims 7 and 13)

“A video codec” as written in claims 7 and 13 should be given its plain and ordinary meaning. To the extent the Court deems a construction is necessary, the plain and ordinary meaning is “software or hardware component/module that encodes and/or decodes video data.” This construction is clearly supported by the specification. For example, the patent refers to Figure 3 as an example of “a video codec.”

Figure 3	Description of Figure 3
<p>The diagram illustrates a video codec 10, which is divided into an encoder part 100 and a decoder part 200. The encoder part 100 receives 'Video in 101' and processes it through a series of blocks: a switch 102, a DCT block 103, a quantization block Q 104, a quantization inverse block Q⁻¹ 108, and an IDCT block 109. A motion estimator 111 and a motion compensator 222 are also part of the encoder. The encoder outputs 'Data out (50)'. The decoder part 200 receives 'Data in (50)' and processes it through a series of blocks: a switch 218, a dequantization block Q⁻¹ 220, an IDCT block 221, and a picture store 223. The decoder outputs 'Video out (70)'. The diagram also shows a control block 105, a data store 114, and a temporary picture data store 228. The entire system is labeled 'Fig 3' and '10'.</p>	<p>“FIG. 3 shows an example of a video codec” (Ex. 2 (’714 Patent) at 5:10).</p> <p>“FIG. 3 shows an example of a video codec 10 according to the invention. The video codec comprises an encoder part 100 and a decoder part 200.” (Ex. 2 (’714 Patent) at 5:57-60) (emphasis added).</p> <p>The video codec 10 receives a video signal to be encoded” (Ex. 2 (’714 Patent) at 6:12-13) (emphasis added). “The operation of the video codec 10 will now be described with reference to its decoding role” (<i>id.</i> at 7:64-65) (emphasis added).</p>

As is clear from the description above, the video codec must have the capability to encode and/or decode video data. Thus, “a video codec” provides a structure with which a POSITA would understand the claim. As such, the statement is not mere statement of intended purpose, but instead recites essential structure of the invention. *Shoes by Firebug*, 962 F.3d at 1367.

With respect to claim 7, “A Video Codec” is limiting because, otherwise claim 7 would be the exact same claim as claim 6. As shown in the comparison below the only difference between claims 6 and 7 is the addition of the disputed term, highlighted below. Otherwise, the claims are **identical**.

6. A <u>video encoder comprising</u> an input for receiving a video signal representing a sequence of pictures...[identical claim language]	7. A video codec including a video encoder, the <u>video encoder comprising</u> an input for receiving a video signal representing a sequence of pictures...[identical claim language]
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The doctrine of claim differentiation favors construing the claims as covering different scope and the disputed term as limiting. *Novartis Pharms. Corp. v. Accord Healthcare Inc.*, 387

F. Supp. 3d 429, 435-7 (D. Del. 2019) (finding a preamble limiting where the claims would otherwise be identical). Moreover, there is presumption against claim redundancy that would favor construing the disputed term as limiting. *Id.* at 436-37 (citing *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1369 (Fed. Cir. 2005)); *CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000).

With respect to claim 13, when read as a whole, “a video codec” is ***not*** a preamble. In fact, there is separate language that comes before a term “a video codec.” Notably, Claim 13 reads, “***A multimedia system including*** a video codec, the codec comprising...” A preamble should appear at the beginning of the claim, which is not the case here. *Biovail Labs. Int'l SRL v. Impax Labs., Inc.*, 433 F. Supp. 2d 501, 507 (E.D. Pa. 2006) (“The preamble of a patent claim consists of the words at the beginning of the claim”); *MadGrip Holdings, LLC v. W. Chester Holdings, Inc.*, No. 16-CV-272, 2017 WL 4286244, at *6 (D. Vt. Sept. 27, 2017) (“A preamble is an introductory statement at the beginning of a claim”). Therefore, Canon’s arguments with respect to Claim 13 are nonsensical. Canon seeks to construe terms within a Claim, and not at the beginning, as non-limiting simply because Canon seeks to improve its invalidity position.

Moreover, the term “a video codec” in Claim 13 provides antecedent basis for a limitation later in the claim. Claim 13 refers to “the codec” later in the claim as emphasized in the following quotation, “A multimedia system including a video codec, ***the codec comprising***...” As such, “the codec” later in the claim relies on the term for antecedent basis. *Shoes by Firebug*, 962 F.3d at 1367 (“dependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention”) (internal quotations omitted).

2. “A Multimedia System” (Claims 8, 13)

“A multimedia system” as written in claims 8 and 13 should be given its plain and ordinary meaning. To the extent the Court deems a construction is necessary, the plain and ordinary meaning is “a system that is capable of processing data such as text, audio, images, videos, etc.” WSOU’s construction is clearly supported by the specification. For example, the patent refers to Figures 1 and 2 as examples of a multimedia system and multimedia components of a multimedia system. Figure 1, for example, “shows *a multimedia mobile communications system.*” Ex. 2 (’714 Patent) at 5:6-7(emphasis added). As another example, figure 2 “shows an example of the *multimedia components of a multimedia terminal.*” Ex. 2 (’714 Patent) at 5:8-9 (emphasis added). Moreover, the specification clearly describes a multimedia system having the capabilities consistent with its plain meaning: “The framework of an entire multimedia content creation and retrieval system will now be described with reference to FIG. 9. The system has one or *more media sources 90, e.g. a camera and a microphone. Multimedia content can be synthetically created e.g. animated computer graphics and digitally generated music.*” Ex. 2 (’714 Patent) at 12:58-63 (emphasis added).

The term at issue, as used by the claims, gives meaning and life to the claims because it recites an essential structure to the claim. As shown in Figures 1 and 2 and the related disclosure cited above, “a multimedia system” provides a structure with which a POSITA would understand the claim. Also, the specification itself explains that the multimedia system is necessary to the structure of the claim as it is a further extension of the invention. Ex. 2 (’714 Patent) at 4:5-37 (“The *invention also extends* to a video codec *and a multimedia system* including a video encoder according to the invention) (emphasis added). As such, the statement is not mere statement of intended purpose, but instead recites essential structure of the invention. *Shoes by Firebug*, 962 F.3d at 1367.

With respect to Claim 8, “a multimedia system” is limiting because, otherwise, it would be the exact same claim as claim 6. As shown below, the only difference between claims 6 and 8 is the addition of the disputed term. The claims are, otherwise, *identical*.

6. A video encoder comprising an input for receiving a video signal representing a sequence of pictures...[identical claim language]	8. A <i>multimedia system including a video encoder</i> , the video encoder comprising an input for receiving a video signal representing a sequence of pictures...[identical claim language]
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Similarly, “a multimedia system” in claim 13 is limiting because, otherwise, the scope of the claim would be the same as claim 7. In fact, as shown in the comparison below, the claims are substantively *identical*, except for the limitation requiring “a multimedia system.”

7. A video codec including a video encoder, the video encoder comprising an input for receiving a video signal representing a sequence of pictures...[identical claim language]	13. A <i>multimedia system including</i> a video codec, the codec comprising a video encoder, the video encoder comprising an input for receiving a vide[o] signal al representing a sequence of pictures...[identical claim language]
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This term should be considered limiting for the same reasons discussed above with respect to “a video codec.” The doctrine of claim differentiation and presumption against redundancy necessitates a reading where the disputed term is limiting. *Novartis*, 387 F. Supp. 3d at 435-7.

Moreover, during prosecution the examiner clearly found, in both claims 8 and 13, that the term “a multimedia system” to be limiting. The examiner rejected claim 8 on a different basis than claim 6 (obviousness instead of anticipation). Ex. 17 (September 30, 2005 Final Rejection) at 5-6. The examiner explained the difference in the rejection was because of the additional limitation, “a multimedia system.” *Id.* at 6. Specifically, the examiner noted, “[r]egarding ***claims 8***, 12, and ***13***, ***most*** of the limitations of these claims have been noted in the above rejection of claims 6 and 7. It is noted that Ueda is silent about ***a multimedia system*** and a portable electronic device including a video encoder.” *Id.* (emphasis added). Because the examiner relied on the disputed

term as limiting, the Court should adopt WSOU's construction. *Catalina*, 289 F.3d at 808 (Fed. Cir. 2002).

3. "A Portable Electronic Device" (Claim 12)

"A portable electronic device" as written in claim 12 should be given its plain and ordinary meaning. To the extent the Court deems a construction is necessary, the plain and ordinary meaning is "a device that can be easily moved." This construction is clearly supported by the specification. For example, the patent refers to Figures 1 as an example of a portable electronic device. Specifically figure 1 shows a handled "multimedia mobile communications system." Ex. 2 ('714 Patent) at 5:6-7; *see also id.* at 5:31-6.

The term, as used by the claim, gives meaning and life to the claim because it recites an essential structure to the claim. As shown in Figure 1, the handheld device is "a portable electronic device," which provides a structure with which a POSITA would understand the claim. The specification explains that the term is necessary to the structure of the claim as it is a further extension of the invention. Ex. 2 ('714 Patent) at 4:65-67 ("The ***invention extends to a portable electronic device*** incorporating a video encoder or video decoder according to the invention.) (emphasis added). Furthermore, a POSITA would understand that "a portable electronic device" generally provides structure to the claim. As such, the statement is not mere statement of intended purpose, but instead recites essential structure of the invention. *Shoes by Firebug*, 962 F.3d at 1367 (Fed. Cir. 2020).

Additionally, the term "a portable electronic device" is limiting because, otherwise, claim 12 would be the exact same claim as claim 6. As shown below, the only difference between claims 6 and 12 is the addition of the disputed term. Otherwise, the claims are ***identical***.

6. A video encoder comprising an input for receiving a video signal representing a sequence of pictures...[identical claim	12. A <i>portable electronic device incorporating a video encoder</i> the video encoder comprising an input for receiving a video signal representing a
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language]	sequence of pictures...[identical claim language]
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This term should be considered limiting for the same reasons discussed above with respect to “a video codec.” The doctrine of claim differentiation and presumption against redundancy necessitates a reading where the disputed term is limiting. *Novartis*, 387 F. Supp. 3d at 435-7.

Moreover, during prosecution the examiner clearly found, that the term “a portable electronic device” to be limiting. The examiner rejected claim 12 on a different basis than claim 6 (obviousness as opposed to anticipation). Ex. 17 (September 30, 2005 Final Rejection) at 5-6. The examiner explained the difference in the rejection was on account of the additional limitation, “a portable electronic device.” *Id.* at 6. Specifically, the examiner noted, “[r]egarding **claims 8, 12, and 13, *most*** of the limitations of these claims have been noted in the above rejection of claims 6 and 7. It is noted that Ueda is silent about a multimedia system and ***a portable electronic device*** including a video encoder.” *Id.* (emphasis added). Because the examiner relied on the disputed term as limiting, the Court should adopt WSOU’s construction. *Catalina*, 289 F.3d at 808 (Fed. Cir. 2002).

c. “The Encoder Is Arranged To Transmit” (Claim 31)

WSOU’s Proposed Construction	Canon’s Proposed Construction
Plain and ordinary meaning; or, if the Court deems a construction is necessary: “the encoder is configured to transmit”	Indefinite OR “circuitry of the encoder causes transmission to a decoder both locally and over a network”

The claim term has a plain and ordinary meaning that should govern. To the extent the Court deems it necessary to construe, the term should be construed according to its plain meaning as “the encoder is configured to transmit.” The claim language supports this construction. More specifically, Claim 31 depends from claim 6 and is directed to a video encoder that is also able to “transmit pictures.” Accordingly, the plain meaning of the claim term is consistent with WSOU’s proposed construction that the encoder is “configured to transmit.”

The specification provides further support that the claim term would be clear to a POSITA. The specification contemplates the transmission of encoded data. Ex. 2 ('714 Patent) at 7:60-63. As another example, the patent describes an embodiment encoded to prevent “transmission errors.” *Id.* at 5:30-35. As another example, the specification contemplates the transmission of “multiple copies” in “different packets” to minimize transmission error. *Id.* at 11:39-47. Further, a POSITA would understand that “A video encoder . . . , wherein the encoder is arranged to transmit pictures” would be sufficiently definite to create an encoder configured to transmit.

Moreover, other courts have similarly construed the term “arranged” according to its plain and ordinary meaning and have found that “arranged” means “configured” *See Globespanvirata, Inc. v. Texas Instrument, Inc.*, No. CIV.03-2854(GEB), 2005 WL 984346, at *25 (D.N.J. Apr. 7, 2005). In *Globespanvirata*, the court concluded “that the ordinary meaning of the term “arranged” should be adopted” because there was “no evidence in the specification that the patentees chose to define the term in a different way.” *Id.* Ultimately, “for simplicity” the court concluded that the term “configured” could replace the term “arranged.” *Id.*

Canon contends that “the encoder is arranged to transmit” term should be construed to mean “circuitry of the encoder causes transmission to a decoder both locally and over a network.” Df.. Br. at 33-34. That is improper because it imports additional limitations that is clearly not required by the claim. Canon’s only evidence is a statement in the description that the patent is concerned with the operation of the video codec. Ex. 2 ('714 Patent) at 5:54-57. But that alone is insufficient to import a limitation from the specification, and Canon’s proposal should thus be ignored. *Toshiba*, 681 F.3d 1358 at 1369.

Alternatively, Canon contends that “the encoder is arranged to transmit” should be construed as indefinite. But Canon has failed to preserve that invalidity argument because it had

not provided WSOU with sufficient notice. *See* Canon’s Invalidity Contentions dated Jul. 7, 2021 at 17-19. As a result, Canon has prejudiced WSOU’s ability to address this dispute. Accordingly, Canon’s argument should be deemed waived. To the extent the argument is not waived, that argument fails. As an initial matter, Canon cites no evidence nor case law in support of its contention that the claim is indefinite. Instead, Canon relies on baseless assertion that it is unclear whether the encoder needs to send a control signal to the transmitter via a controller. As explained above, the “the encoder is arranged to transmit”, as used in the context of patent and to a POSITA, clearly means “the encoder is configured to transmit”, and is therefore sufficiently definite.

d. “Temporally Prior” (Claim 3)

WSOU’s Proposed Construction	Canon’s Proposed Construction
Plain and ordinary meaning; or, if the Court deems a construction is necessary: “preceding in time”	Indefinite.

The claim term has a plain and ordinary meaning that should govern. To the extent the Court deems it necessary to construe, the term should be construed according to its plain meaning as “preceding in time.” The claim itself in the context of its independent counterpart is clear. Claim 3 depends from claim 1, which explains that there is a sequence of pictures is used to form an encoded video signal. It is clear that the sequence referenced in claim 3 relates back to claim 1 and refers to the same sequence of pictures or frames. “Temporally prior” thus simply refers to pictures or frames in the sequence of a video that are “preceding in time” within that video.

The specification provides further support that the claim term would be clear to a POSITA. For example, Figure 4 describes how frames in sequence can be processed. Ex. 2 (’714 Patent) at 7:37-43. In referencing Figure 4, the patent describes that a frame is encoded in a “temporally predicative manner.” *Id.* The patent explains that the frame is encoded “with reference to a frame occurring within the video sequence.” *Id.* In that context, a POSITA would understand that

temporally prior refers to a picture occurring earlier in the sequence. Similarly, the specification describes a sequence of pictures within a video and those pictures occur temporally within the video. Ex. 2 ('714 Patent) at 8:26-29. According to the patent, a picture can thus be predicted by either a forward or backward prediction. *Id.* (“All INTRA pictures after the first INTRA picture of a video sequence may have temporally predicted representation(s) encoded in a forward prediction manner and/or a backward prediction manner”). A POSITA would readily understand temporally prior to be a frame or picture preceding in the sequence.

Canon contends that “temporally prior” should be construed as indefinite. But Canon has failed to preserve that invalidity argument because it had not provided WSOU with sufficient notice. *See* Ex. 18 (Canon’s Invalidity Contentions dated Jul. 7, 2021) at 17-19. As a result, Canon has prejudiced WSOU’s ability to address this dispute. Accordingly, Canon’s argument should be deemed waived.

To the extent the argument is not waived, that argument fails. As explained above, the “temporally prior”, as used in the context of patent and to a POSITA, clearly means “preceding in time”, and is therefore sufficiently definite.

e. “Said Other Picture” (Claims 29, 32)

WSOU’s Proposed Construction	Canon’s Proposed Construction
Plain and ordinary meaning; or, if the Court deems a construction is necessary: “the other picture”	Indefinite. OR “said another picture”

The claim term has a plain and ordinary meaning that should govern. To the extent the Court deems it necessary to construe, WSOU proposes that the term be construed according to its plain meaning as “the other picture.” That is consistent with the claims and specification. More specifically, claims 29 and 32 both depend from claim 6 and clearly refer back to the term “another picture” that referenced in claim 6. Claim 6 recites a first picture (or said part thereof) in a

sequence that is encoded using a second encoding mode with reference to another picture of the sequence to produce a corresponding temporally predicted second encoded representation of the first picture. Claim 29 adds to claim 6 by reciting that the other picture is the one “closest” to the first picture. Similarly, claim 32 adds to claim 6 by reciting that the other picture recited in claim 6 is a picture that is encoded in the first mode.

Canon contends that “said other picture” should be construed as indefinite. But Canon has failed to preserve that invalidity argument because it had not provided WSOU with sufficient notice—or any notice for that matter—as to any cognizable invalidity theory. *See* Ex. 18 (Canon’s Invalidity Contentions dated Jul. 7, 2021) at 17-19. As a result, Canon has prejudiced WSOU’s ability to address this dispute. Accordingly, Canon’s argument should be deemed waived.

To the extent the argument is not waived, it must fail. As explained above, the term clearly references “another picture” as described in its independent counterpart (claim 6) and therefore finds antecedent basis and is sufficiently definite. Moreover, it is well-established that a purported lack of an antecedent basis does not render a claim indefinite as long as the claim “apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by [§ 112 ¶ 2].” *In re Downing*, 754 F. App’x at 996. Here, a POSITA would be fully apprised to what term refers.

IV. CONCLUSION

WSOU respectfully requests the Court to adopt its proposed constructions for the terms in the ’346 and ’714 Patents.

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RESPECTFULLY SUBMITTED,

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CERTIFICATE OF SERVICE

The undersigned counsel hereby certifies that on September 15, 2021, pursuant to Local Rule CV-5, a true and correct copy of the foregoing document was served via the Court's CM/ECF system on all parties who have appeared in this case.

/s/ Jonathan K. Waldrop

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